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## Who are Healthcare Personnel (HCP)?

- Healthcare personnel are persons who share air with patients
- HCP include but are not limited to:
  - Nurses
  - Medical Assistants
  - Respiratory therapists
  - Clerical staff
  - Radiology technicians
  - Students (e.g., medical, nursing, and other)
  - Social workers
  - Chaplains
  - Volunteers
  - Dietary workers
  - Dentists
  - Physicians, other primary care providers

## Why are Immunizations Important for Healthcare Personnel?

- You are exposed to serious, often deadly diseases
- You transmit these diseases to vulnerable, at risk patients
  - Along with family and community members
- Vaccines provide safe & effective protection

| Recommended adult immunization schedule, by vaccine and medical and other indications |  |  |  |   |  |  |
|---|--|--|--|---|--|--|
| Indication ▶  | Concurrent immunodeficiency, asplenia, lymphoma, chronic liver disease, chronic renal insufficiency, splenectomy, splenic dysfunction, splenectomy, or high-dose corticosteroids | Diabetes, heart disease, chronic pulmonary disease, splenectomy, chronic liver disease, chronic renal insufficiency, splenectomy, or high-dose corticosteroids | Asplenia* (including elective splenectomy, congenital asplenia, and transient splenic dysfunction) | Chronic liver disease, chronic renal insufficiency, splenectomy, or high-dose corticosteroids | Kidney failure, and single renal transplant, or hemodialysis | Human immunodeficiency virus (HIV) infection** |
| Vaccine ▼   | Pregnancy  |  |  |   |  | Health care workers                            |
| Tetanus, diphtheria, pertussis (Td/Tdap)†   |  |  |  | 1 dose Td booster every 10 yrs  |  |  |
| Human papillomavirus (HPV)‡   |  |  |  | Substitute 1 dose of Tdap for Td  |  |  |
| Human papillomavirus (HPV)‡   |  |  |  | 3 doses for women through age 26 years (0, 2, 6 mos)  |  |  |
| Measles, mumps, rubella (MMR)§  |  |  |  | for 2 doses   |  |  |
| Varicella¶  |  |  |  | 2 doses (0, 4–8 wks)  |  | 2 doses  |
| Influenza§  |  |  |  | 1 dose annually   | 1 dose annually  | 1 dose annually                                |
| Pneumococcal (polysaccharide)¶  |  |  |  | 1 dose annually   | 1 dose annually  | 1 dose annually                                |
| Hepatitis A§  |  |  |  | 2 doses (0, 6–12 mos, or 0, 6–18 mos)   | 2 doses (0, 6–12 mos, or 0, 6–18 mos)                        | 2 doses (0, 6–12 mos, or 0, 6–18 mos)          |
| Hepatitis B§  |  |  |  | 3 doses (0, 1–2, 4–6 mos)   | 3 doses (0, 1–2, 4–6 mos)                                    | 3 doses (0, 1–2, 4–6 mos)                      |
| Meningococcal¶  |  |  |  | 1 dose  | 1 dose   | 1 dose   |

\*Covered by the Vaccine Injury Compensation Program

These recommendations must be read along with the footnotes, which can be found on the next 2 pages of this schedule.

For persons in this category who meet the age requirements and who lack evidence of immunity (e.g., lack documentation of vaccination) or have no evidence of prior infection

Recommended if some other risk factor is present (e.g., on the basis of medical occupations, lifestyle, or other indications)

Contraindicated

| Vaccine                               | Recommendations in brief  |
|---------------------------------------|---|
| <b>Hepatitis B</b>                    | Give 3-dose series (dose #1 now, #2 in 1 month, #3 approximately 5 months after #2). Give IM. Obtain anti-HBs serologic testing 1–2 months after dose #3.   |
| <b>Influenza</b>                      | Give 1 dose of TIV or LAIV annually. Give TIV intramuscularly or LAIV intranasally.   |
| <b>MMR</b>                            | For healthcare personnel (HCP) born in 1957 or later without serologic evidence of immunity or prior vaccination, give 2 doses of MMR, 4 weeks apart. For HCP born prior to 1957, see below. Give SC.       |
| <b>Varicella (chickenpox)</b>         | For HCP who have no serologic proof of immunity, prior vaccination, or history of varicella disease, give 2 doses of varicella vaccine, 4 weeks apart. Give SC.   |
| <b>Tetanus, diphtheria, pertussis</b> | Give all HCP a Td booster dose every 10 years, following the completion of the primary 3-dose series. Give a 1-time dose of Tdap to all HCP younger than age 65 years with direct patient contact. Give IM. |
| <b>Meningococcal</b>                  | Give 1 dose to microbiologists who are routinely exposed to isolates of <i>N. meningitidis</i> .  |

*Hepatitis A, typhoid, and polio vaccines are not routinely recommended for HCP who may have on-the-job exposure to fecal material.*

**Hepatitis B**

Healthcare personnel (HCP) who perform tasks that may involve exposure to blood or body fluids should receive a 3-dose series of hepatitis B vaccine at 0-, 1- and 6-month intervals. Tests for hepatitis B surface antibody (anti-HBs) to document immunity 1–2 months after dose #3.

measles or mumps disease; or (b) laboratory evidence of measles, mumps or rubella immunity (HCP who have an "indeterminate" or "equivocal" level of immunity upon testing should be considered nonimmune); or (c) vaccination after the onset of measles, mumps, and rubella (i.e., administration on or after the first birthday of two doses of five measles and

Included in your document as a full-size document

Olivia

- 32 years old
- Registered Nurse with direct patient care
- History of chickenpox
  - Per parental recall (mom's)
- Immunization Record Card
  - hep B 2/14/97, 3/16/97, 5/20/97
  - MMR 6/08/99
  - Td 6/08/99
  - LAIV 10/30/06



\*Note: Presentation may not include all slides listed and the order may be changed.

## Hepatitis B

- Risk of transmission from needlestick exposure is 6%-30%
- 17,000 infections in 1983
- 400 infections in 1995
- 5%-10% of acute infections lead to chronic infection

ACIP recommends vaccination for all HCP who may be exposed to blood or body fluids or are at risk for sharps injury

Immunization of Health-Care Workers, Recommendations of ACIP  
MMWR, December 26, 1997; Vol 46 No. RR-18

## Is Olivia Protected?



- Hep B
  - 2/14/97
  - 3/16/97
  - 5/20/97

## Tdap Recommendations

- HCP *with direct patient contact* should receive a single dose of Tdap as soon as feasible
  - An interval as short as 2 years (or less) from the last dose of Td is recommended
  - Assure HCP having contact with infants younger than 12 months of age are vaccinated first
- HCP *without direct patient contact* should receive Tdap according to routine recommendations
  - An interval as short as 2 years since last Td is encouraged

Preventing Tetanus, Diphtheria, and Pertussis Among Adults, Recommendations of the ACIP, MMWR December 15, 2006; 55(RR-3): 1-43.

## Give Tdap Today!



When will Olivia need another dose of Td/Tdap?

**Vaccination History**  
**Td 6/8/99**  
**Tdap Today**



**All persons who work in medical facilities should be immune to measles, mumps and rubella**

Recommendations of the Advisory Committee on Immunization Practices (ACIP) and the Hospital Infection Control Practices Advisory Committee (HICPAC)  
Reprinted January 1998

## Which HCP need MMR?

- HCP born in 1957 or later without evidence of immunity should receive 2 doses of MMR
- Consider 1 dose of MMR (2 doses during a mumps outbreak) to unvaccinated HCP born in 1956 or earlier without evidence of immunity
- Evidence of immunity is:
  - History of documented physician-diagnosed measles and mumps disease **or** laboratory evidence of measles and mumps
  - Lab evidence of rubella immunity
  - Age appropriate vaccination history

\*Note: Presentation may not include all slides listed and the order may be changed.

## Here's More to Consider...



Vaccination History  
6/8/99

- She also has written documentation of rubella immunity...
- Does she *really* need another MMR?

## Varicella Immunity

- Born in the U.S. before 1980
  - For HCP, do not use this alone as evidence of immunity
- Lab evidence of: immunity or disease confirmation
- A healthcare provider's: (nurse, NP, physician, PA)
  - Diagnosis of varicella disease **or**
  - Verification of history of typical varicella disease
- History of herpes zoster (shingles) based on healthcare provider's diagnosis
- Documentation of age-appropriate vaccination
  - Adolescents and adults: two doses

Prevention of Varicella, Recommendations of the ACIP  
MMWR, June 22, 2007; Vol. 56 No. RR-4

## Is Mom ALWAYS right?



| Vaccine ▼                                 | Age group (yrs) ▶ | 19–49 years        | 50–64 years     | ≥65 years |
|---|-------------------|--------------------|-----------------|-----------|
| Tetanus, diphtheria, pertussis (Td/Tdap)* |                   |                    |                 |           |
| Human papillomavirus (HPV)*               |                   | 3 doses (3 months) |                 |           |
| Measles, mumps, rubella (MMR)*            |                   | 1 of               |                 |           |
| Varicella*                                |                   | 2 doses            |                 |           |
| Influenza*                                |                   | 1 dose             |                 |           |
| Pneumococcal (polysaccharide)*†           |                   |                    |                 | 1 dose    |
| Hepatitis A*                              |                   |                    |                 |           |
| Hepatitis B*                              |                   |                    |                 |           |
| Meningococcal†§                           |                   |                    | 1 or more doses |           |

**H** Health Risk  
**A** Age  
**L** Lifestyle  
**O** Occupation

\*Note: Presentation may not include all slides listed and the order may be changed.

# Healthcare Personnel Vaccination Recommendations

| Vaccine                               | Recommendations in brief  |
|---------------------------------------|---|
| <b>Hepatitis B</b>                    | Give 3-dose series (dose #1 now, #2 in 1 month, #3 approximately 5 months after #2). Give IM. Obtain anti-HBs serologic testing 1–2 months after dose #3.   |
| <b>Influenza</b>                      | Give 1 dose of TIV or LAIV annually. Give TIV intramuscularly or LAIV intranasally.   |
| <b>MMR</b>                            | For healthcare personnel (HCP) born in 1957 or later without serologic evidence of immunity or prior vaccination, give 2 doses of MMR, 4 weeks apart. For HCP born prior to 1957, see below. Give SC.       |
| <b>Varicella (chickenpox)</b>         | For HCP who have no serologic proof of immunity, prior vaccination, or history of varicella disease, give 2 doses of varicella vaccine, 4 weeks apart. Give SC.   |
| <b>Tetanus, diphtheria, pertussis</b> | Give all HCP a Td booster dose every 10 years, following the completion of the primary 3-dose series. Give a 1-time dose of Tdap to all HCP younger than age 65 years with direct patient contact. Give IM. |
| <b>Meningococcal</b>                  | Give 1 dose to microbiologists who are routinely exposed to isolates of <i>N. meningitidis</i> .  |

*Hepatitis A, typhoid, and polio vaccines are not routinely recommended for HCP who may have on-the-job exposure to fecal material.*

## Hepatitis B

Healthcare personnel (HCP) who perform tasks that may involve exposure to blood or body fluids should receive a 3-dose series of hepatitis B vaccine at 0-, 1-, and 6-month intervals. Test for hepatitis B surface antibody (anti-HBs) to document immunity 1–2 months after dose #3.

- If anti-HBs is at least 10 mIU/mL (positive), the patient is immune. No further serologic testing or vaccination is recommended.
- If anti-HBs is less than 10 mIU/mL (negative), the patient is unprotected from hepatitis B virus (HBV) infection; revaccinate with a 3-dose series. Retest anti-HBs 1–2 months after dose #3.
  - If anti-HBs is positive, the patient is immune. No further testing or vaccination is recommended.
  - If anti-HBs is negative following 6 doses of vaccine, the patient is a non-responder.

**For non-responders:** HCP who are non-responders should be considered susceptible to HBV and should be counseled regarding precautions to prevent HBV infection and the need to obtain HBIG prophylaxis for any known or probable parenteral exposure to hepatitis B surface antigen (HBsAg)-positive blood.<sup>1</sup> It is also possible that non-responders are persons who are HBsAg positive. Testing should be considered. HCP found to be HBsAg positive should be counseled and medically evaluated.

**Note:** Anti-HBs testing is not recommended routinely for previously vaccinated HCP who were not tested 1–2 months after their original vaccine series. These HCP should be tested for anti-HBs when they have an exposure to blood or body fluids. If found to be anti-HBs negative, the HCP should be treated as if susceptible.<sup>1</sup>

## Influenza

**Trivalent (Inactivated) Influenza Vaccine (TIV):** May give to any HCP.  
**Live, Attenuated Influenza Vaccine (LAIV):** May give to any non-pregnant healthy HCP age 49 years and younger.

1. All HCP should receive annual influenza vaccine. Groups that should be targeted include all personnel (including volunteers) in hospitals, outpatient, and home-health settings who have any patient contact.
2. TIV is preferred over LAIV for HCP who are in close contact with severely immunosuppressed persons (e.g., stem cell transplant patients) when patients require a protective environment.

## Measles, Mumps, Rubella (MMR)

HCP who work in medical facilities should be immune to measles, mumps, and rubella.

- HCP born in 1957 or later can be considered immune to measles, mumps, or rubella only if they have documentation of (a) physician-diagnosed

measles or mumps disease; or (b) laboratory evidence of measles, mumps, or rubella immunity (HCP who have an “indeterminate” or “equivocal” level of immunity upon testing should be considered nonimmune); or (c) appropriate vaccination against measles, mumps, and rubella (i.e., administration on or after the first birthday of two doses of live measles and mumps vaccines separated by 28 days or more, and at least one dose of live rubella vaccine).

- Although birth before 1957 generally is considered acceptable evidence of measles, mumps, and rubella immunity, healthcare facilities should consider recommending a dose of MMR vaccine (two doses during a mumps outbreak) to unvaccinated HCP born before 1957 who are in either of the following categories: (a) do not have a history of physician-diagnosed measles and mumps disease or laboratory evidence of measles and mumps immunity and (b) do not have laboratory evidence of rubella immunity.

## Varicella

It is recommended that all HCP be immune to varicella. Evidence of immunity in HCP includes documentation of 2 doses of varicella vaccine given at least 28 days apart, history of varicella or herpes zoster based on physician diagnosis, laboratory evidence of immunity, or laboratory confirmation of disease.

## Tetanus/Diphtheria/Pertussis (Td/Tdap)

All adults who have completed a primary series of a tetanus/diphtheria-containing product (DTP, DTaP, DT, Td) should receive Td boosters every 10 years. As soon as feasible, HCP younger than age 65 years with direct patient contact should be given a 1-time dose of Tdap, with priority given to those having contact with infants younger than age 12 months.

## Meningococcal

Vaccination is recommended for microbiologists who are routinely exposed to isolates of *N. meningitidis*. Use of MCV4 is preferred among persons ages 11–55 years; give IM. If MCV4 is unavailable, MPSV is an acceptable alternative for HCP ages 11–55 years. Use of MPSV is recommended for HCP older than age 55; give SC.

## References

1. See Table 3 in “Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HBV, HCV, and HIV and Recommendations for Postexposure Prophylaxis,” *MMWR*, June 29, 2001, Vol. 50, RR-11.

For additional specific ACIP recommendations, refer to the official ACIP statements published in *MMWR*. To obtain copies, visit CDC’s website at [www.cdc.gov/nip/publications/ACIP-list.htm](http://www.cdc.gov/nip/publications/ACIP-list.htm); or visit the Immunization Action Coalition (IAC) website at [www.immunize.org/acip](http://www.immunize.org/acip).

*Adapted with thanks from the Michigan Department of Community Health*

# Healthcare Personnel!

SAFER • HEALTHIER • PEOPLE™

## Are your vaccinations up-to-date?

You should be immune to:

**PROTECT  
YOUR  
PATIENTS.**

**PROTECT  
YOUR FAMILY.**

**PROTECT  
YOURSELF.**

**GET  
VACCINATED!**



### ▶ **INFLUENZA**

You need a flu vaccination every year. Unvaccinated healthcare personnel can spread influenza to patients and are a key cause of influenza outbreaks among patients and long-term care residents. You cannot get the flu from the vaccine.

### ▶ **HEPATITIS B**

5%–10% of acute infections lead to chronic infection, and these lead to liver damage (cirrhosis), liver cancer, or death. Hepatitis B vaccine protects nearly all who are in contact with blood, body fluids, or used needles.

### ▶ **MEASLES/MUMPS/RUBELLA**

If you are not already immune, you should be vaccinated. Even mild or undetectable rubella disease can cause fetal anomalies.

### ▶ **TETANUS/DIPHTHERIA/PERTUSSIS**

You need a booster every 10 years. You may need a dose sooner if you are injured or during a pertussis outbreak.

### ▶ **VARICELLA (CHICKENPOX)**

Varicella can be transmitted in hospitals by patients, staff, and visitors. If you are not already immune, you should be vaccinated.

